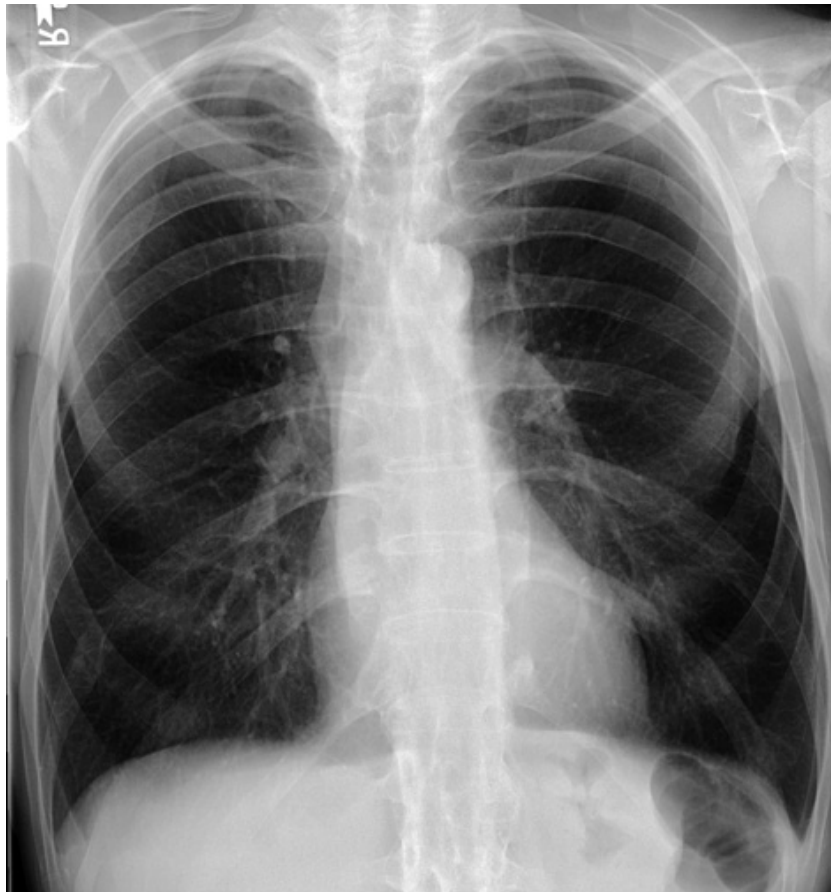


October 2011 Case of the Month

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Clinical History

A 67-year-old man with a history of squamous cell carcinoma of the throat, melanoma, and anemia presented with vague complaints of chest pain. A frontal chest radiograph (Figure 1) was performed.



1. What is the main finding on the chest radiograph? How would you describe the finding?
 1. A solitary pulmonary nodule
 2. Diffuse linear and reticular abnormalities suggesting interstitial lung disease
 3. A posterior mediastinal mass
 4. Multiple cavitory nodules
 5. Bilateral pleural effusions and thickening

Correct!
3. A posterior mediastinal mass

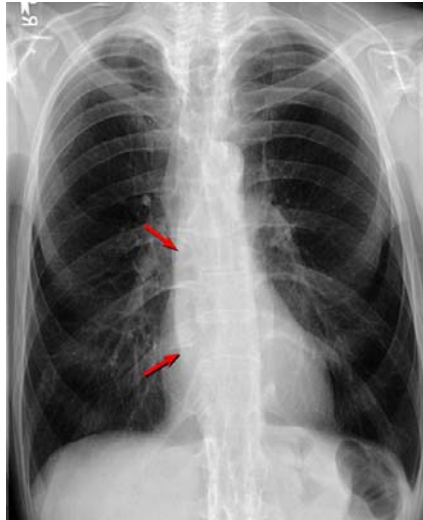
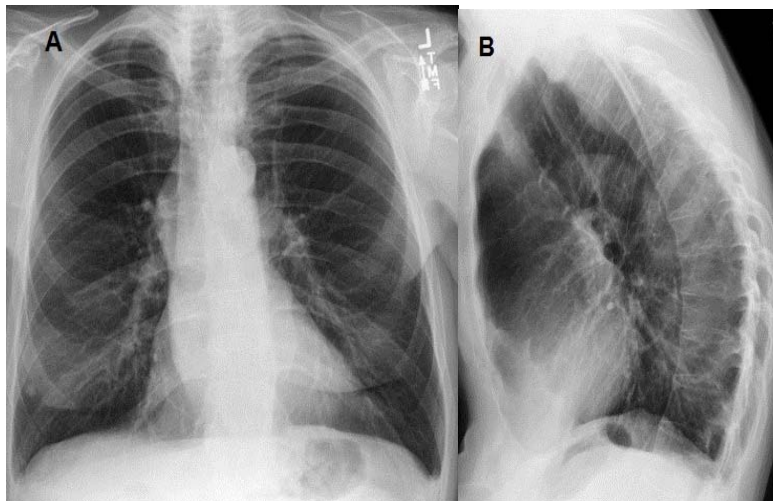


Figure 1: Frontal chest radiograph shows somewhat hyperlucent-appearing lungs, suggesting obstructive lung disease. A smoothly marginated contour is present in the right paraspinous area (arrows), projecting through the right heart and mediastinum.

Clinical Course

The patient returned 4 years later for follow up imaging (Figure 2A and B).



Figures 2A and B: Frontal (A) and lateral (B) chest radiographs obtained 4 years after Figure 1 show enlargement of the right paraspinous contour abnormality. The lateral radiograph (B) shows faintly increased opacity overlying the mid- to lower thoracic spine, suggesting that the lesion is located in the posterior mediastinum.

The main abnormal finding on the earlier chest radiograph was thought to have become more pronounced, so thoracic CT (Figure 3A and B) was performed. What is the main finding on the thoracic CT?

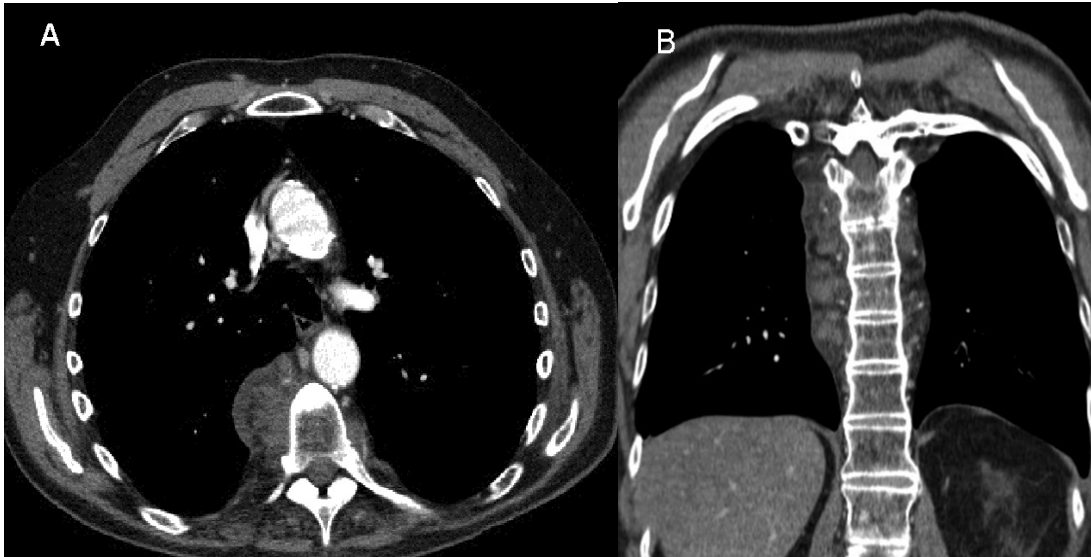


Figure 3: Axial (A) and coronal (B) thoracic CT displayed in soft tissue windows shows bilateral, right-larger-than-left, paraspinal masses. The coronal image (B) highlights the paraspinal location of the lesions. The paraspinal masses contain visible areas of low attenuation, consistent with fat. Compare the appearance of these low attenuation areas with that of subcutaneous fat.

Among the following choices, which is the next most appropriate step in the evaluation of this patient?

1. Surgical biopsy
2. Pleural biopsy
3. Observation
4. Transthoracic percutaneous CT-guided biopsy
5. Bronchoscopy

Correct!

4. Transthoracic percutaneous CT-guided biopsy

Transthoracic percutaneous CT-guided biopsy of the right paraspinal lesion was performed (Figure 4).



Figure 4: Axial thoracic CT obtained in the prone position during percutaneous transthoracic biopsy shows placement of the biopsy needle into the fatty right paraspinal mass.

What is the most likely diagnosis?

1. Metastatic malignancy to the thoracic spine
2. Malignant pleural disease
3. Vasculitis
4. Extramedullary hematopoiesis
5. Achalasia

Correct!

4. Extramedullary hematopoiesis

Differential Diagnosis

The differential diagnostic gamut under consideration for this case is the posterior mediastinal mass. Differential diagnostic considerations for posterior mediastinal lesions include abnormalities arising from the thoracic spine (particularly soft tissue masses resulting from vertebral body osteomyelitis and metastatic disease, and paraspinal hematomas in patients with thoracic spine fractures), abnormalities of the esophagus (dilation, as occurs with achalasia, neoplasms, and esophageal duplication cysts), neurogenic tumors (such those derived from the sympathetic ganglion cells, including neuroblastomas in infants, ganglioneuroblastomas and ganglioneuromas in younger children and adolescents, and lesions derived from the nerve sheath, including schwannomas, neurofibromas, and malignant peripheral nerve sheath tumors), esophageal varices, lymphadenopathy, and extramedullary hematopoiesis. Rare lesions, such as tumors derived from the paraganglionic system (pheochromocytomas and paragangliomas) and thoracic meningoceles may cause posterior mediastinal masses. The low attenuation foci within the paraspinous masses in this patient narrows the differential diagnosis to extramedullary hematopoiesis- the other lesions mentioned generally do not present with intralesional fat.

References

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